

CLAIM LISTING

1. (Original) A method for maintaining SIP contact addresses:  
sending, by a SIP proxy user agent (UA), a first registration message for a remote unit to a SIP registrar;  
sending a second registration message for the remote unit to the SIP registrar;  
receiving, in response to the second registration message, a response that indicates a contact address more recent than any provided by the SIP proxy UA; and  
sending, in response to the received response, a deregistration message for the remote unit to the SIP registrar.
2. (Original) The method of claim 1 further comprising receiving, by the SIP proxy UA, a non-SIP registration request from the remote unit prior to sending the first registration message.
3. (Original) The method of claim 1 wherein the second registration message is sent in response to a registration timer expiration.
4. (Original) The method of claim 1 wherein the first registration message comprises a SIP REGISTER message.
5. (Original) The method of claim 4 wherein the SIP REGISTER message indicates that it comprises a new contact address.
6. (Original) The method of claim 1 wherein the second registration message comprises a SIP REGISTER message.

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7. (Original) The method of claim 1 wherein the response that indicates a contact address more recent than any provided by the SIP proxy UA comprises a SIP 200 OK message and at least one creation time stamp.
8. (Original) The method of claim 7 wherein the response further comprises a group of contact addresses and a creation time stamp for each.
9. (Original) The method of claim 1 wherein the deregistration message comprises a SIP REGISTER message with an Expires header value of "0".

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10. (Original) A method for maintaining SIP contact addresses:
  - receiving a first registration message for a remote unit from a first SIP proxy user agent (UA);
    - storing, as a member of a group of contact addresses for the remote unit, both a first contact address based on the first registration message and a first creation timestamp for the first contact address;
    - receiving a second registration message for the remote unit from a second SIP proxy UA after receiving the first registration message;
    - storing, as a member of the group of contact addresses for the remote unit, both a second contact address for the remote unit and a second creation timestamp for the second contact address;
    - receiving a third registration message for the remote unit from the first SIP proxy UA;
    - sending, in response to the third registration message, a response that indicates a contact address more recent than any provided by the first SIP proxy UA;
    - receiving a deregistration message for the remote unit from the first SIP proxy UA; and
    - removing, from the group of contact addresses for the remote unit, the first contact address.

11. (Original) The method of claim 10 wherein the response that indicates a contact address more recent than any provided by the first SIP proxy UA comprises a SIP 200 OK message and at least one creation time stamp.

12. (Original) The method of claim 11 wherein the response further comprises a group of contact addresses and a creation time stamp for each.

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13. (Original) The method of claim 10 wherein the first registration message comprises a SIP REGISTER message, the second registration message comprises a SIP REGISTER message, and the third registration message comprises a SIP REGISTER message.

14. (Original) The method of claim 10 wherein the deregistration message comprises a SIP REGISTER message with an Expires header value of "0".

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15. (Original) A radio access network (RAN) component comprising:
  - a wireless network interface; and
  - a SIP proxy user agent, communicatively coupled to the wireless network interface, adapted to
    - receive a registration request from a remote unit via the wireless network interface,
    - send a first registration message for the remote unit to a SIP registrar,
    - send a second registration message for the remote unit to the SIP registrar,
    - receive, in response to the second registration message, a response that indicates a contact address more recent than any provided by the SIP proxy UA, and
    - send, in response to the received response, a deregistration message for the remote unit to the SIP registrar.

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16. (Original) A SIP registrar comprising:  
a SIP location data base; and  
a SIP location processor, communicatively coupled to the SIP registration data base,  
adapted to

receive a first registration message for a remote unit from a first SIP proxy user agent (UA),

store in the SIP location data base, as a member of a group of contact addresses for the remote unit, both a first contact address based on the first registration message and a first creation timestamp for the first contact address,

receiving a second registration message for the remote unit from a second SIP proxy UA after receiving the first registration message,

storing in the SIP location data base, as a member of the group of contact addresses for the remote unit, both a second contact address for the remote unit and a second creation timestamp for the second contact address,

receiving a third registration message for the remote unit from the first SIP proxy UA,

sending, in response to the third registration message, a response that indicates a contact address more recent than any provided by the first SIP proxy UA,

receiving a deregistration message for the remote unit from the first SIP proxy UA, and

removing, from the group of contact addresses for the remote unit, the first contact address.

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